

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of the Claims**

Claims 1, 3-8, 11-16, 18-26, 28-30, and 40-47 are pending in the application.

Claims 1, 16, 18, 40, and 41 are independent. The remaining claims depend, directly or indirectly, from claims 1, 16, 18, 40, and 41.

**Amendments to the Specification**

Paragraphs [0044]-[0045], and [0048] of the present application are amended to clarify that element 102 in the Figure 1 refers to shearing element 102. No new matter has been added. Support for these amendments can be found in paragraph [0048], at least.

**Rejection(s) under 35 U.S.C. § 112, ¶ 2**

Claims 1, 3-8, 11-16, 18-26, 28-30, and 40-47 stand rejected under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed.

Applicant respectfully notes that section 2173.02 of the *MPEP* requires that the definiteness of claim language be analyzed, not in a vacuum, but in light of several factors including the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. Further, the test for definiteness is whether “those skilled in the art would understand what is claimed when the claim is read in

light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed.Cir. 1986).

Independent claims 1, 16, 18, 40, and 41 recite, *inter alia*, “at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of a drill bit.” The Examiner asserts that it is not clear what is considered the leading edge.

As used in independent claims 1, 16, 18, 40, and 41, and as used by those of ordinary skill in the art, the term “leading edge” refers to an edge, *i.e.*, an intersection of two surfaces, of the insert or cutting element that, when the insert or cutting element is secured to a bit, is in the direction corresponding to the rotational direction of the bit to effectuate shearing of a formation.

Thus, for at least the reasons outlined above, claims 1-12 satisfy all of the requirements of §112, in view of the knowledge possessed by a person having ordinary skill in the art. Should the Examiner seek to maintain any §112 rejections, the Applicant respectfully requests that the Examiner provide an explanation as to why a skilled artisan would find the claims indefinite. Accordingly, withdrawal of the rejection is respectfully requested.

#### **Rejection(s) under 35 U.S.C. § 102**

Claims 1, 11, 16, 18, 19, 28, and 40-45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,315,066 issued to Dennis (“Dennis”). This rejection is respectfully traversed.

Independent claims 1, 16, 18, 40, and 41 recite, *inter alia*, “at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of a drill bit.”

Dennis discloses a cylindrical insert body having TSP reinforcing components partially exposed from the cylindrical insert body at its end face. Small pieces of diamond grit may be distributed throughout the insert body. As taught by Dennis, the edge portion of the insert, which is comprised *solely* of the insert body, is chamfered. Thus, Dennis does not disclose or suggest a leading edge of the insert to be comprised of both a portion of a thermally stable shearing portion and a portion of a diamond impregnated insert body.

Under Federal Circuit precedent, a rejection under 35 U.S.C. § 102 is improper when the cited reference does not contain each and every element of the rejected claim. *See Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001). Thus, because Dennis does not disclose at least a portion of a diamond impregnated insert body and at least a portion of a thermally stable shearing portion forming a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of a drill bit, as required by independent claims 1, 16, 18, 40, and 41, a rejection under 35 U.S.C. § 102 cannot be supported. Thus, claims 1, 16, 18, 40, and 41 are patentable over Dennis. Dependent claims are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**Rejection(s) under 35 U.S.C. § 103**

Claims 3, 4, 8, 23, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dennis in view of U.S. Patent No. 4,919,220 issued to Fuller (“Fuller”). This rejection is respectfully traversed.

As discussed above with respect to claims 1 and 18, from which claims 3, 4, 8, 23, and 24 depend, Dennis neither shows nor suggests a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of the drill bit, as recited in claims 1 and 18. Fuller, which discloses a drill bit where each cutting element is bonded to a stud which is received in a socket in the bit body and includes a thin polycrystalline diamond hardfacing layer bonded to a thicker backing of tungsten carbide, does not provide that which Dennis lacks, with respect to independent claims 1 and 18.

In view of the above, Dennis and Fuller, whether considered separately or in combination, fail to show or suggest the present invention as recited in independent claims 1 and 18. Thus, claims 1 and 18 are patentable over Dennis and Fuller. Claims 3, 4, 8, 23, and 24, which depend from claims 1 and 18, respectively, are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 5-6, 12-13, 25-26, and 29-30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dennis alone, or Dennis in view of Fuller and further in view of U.S. Patent No. 5,279,374 (“Siever”). This rejection is respectfully traversed.

As discussed above with respect to claims 1, 16, and 18, from which claims 5-6, 12-13, 25-26, and 29-30 depend, Dennis and Fuller neither show nor suggest a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of the drill bit, as recited in claims 1, 16, and 18. Siever, which the Examiner only asserts as teaching a tungsten carbide coating, does not provide that which Dennis and Fuller lack, with respect to independent claims 1, 16, and 18.

In view of the above, Dennis, Fuller, and Siever, whether considered separately or in combination, fail to show or suggest the present invention as recited in claims 1, 16, and 18. Thus, claims 1, 16, and 18 are patentable over Dennis, Fuller, and Siever. Claims 5-6, 12-13, 25-26, and 29-30, which depend from claims 1, 16, and 18 respectively, are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 7 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dennis in view of U.S. Patent Publication No. 2001/0047891 (“Truax”). This rejection is respectfully traversed.

As discussed above with respect to claims 1 and 18, from which claims 7 and 22 depend, Dennis neither shows or suggests a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, where the leading edge corresponds to the rotational direction of the

drill bit, as recited in claims 1 and 18. Truax, which the Examiner only asserts as teaching an insert with thermally stable polycrystalline diamonds, does not provide what Fuller lacks with respect to independent claims 1 and 18.

In view of the above, Dennis and Truax, whether considered separately or in combination, fail to show or suggest the present invention as recited in claims 1 and 18. Thus, claims 1 and 18 are patentable over Dennis and Truax. Claims 7 and 22, which depend from claims 1 and 18, are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 14 stands rejected under 35 U.S.C. § 103 as being unpatentable over Dennis in view of Fuller and U.S. Patent No. 4,943,488 ("Sung"). This rejection is respectfully traversed.

As discussed above with respect to claim 1, from which claim 14 depends, Dennis and Fuller neither show or suggest a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, where the leading edge corresponds to the rotational direction of the drill bit, as recited in claim 1. Sung, which the Examiner only asserts as teaching coated diamond particles, does not provide that which Dennis and Fuller lacks, with respect to independent claim 1.

In view of the above, Dennis, Fuller, and Sung, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 1. Thus, claim 1

is patentable over Dennis, Fuller, and Sung. Claim 14, which depends from claim 18, is allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 15 stands rejected under 35 U.S.C. § 103 as being unpatentable over Dennis in view of Fuller and Sung, as applied to claim 14, and further in view of U.S. Patent No. 3,318,399 (“Garner”). This rejection is respectfully traversed.

As discussed above with respect to claim 14, from which claim 15 depends, Dennis, Fuller, and Sung neither show or suggest a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, where the leading edge corresponds to the rotational direction of the drill bit, as recited in claim 1. Garner, which the Examiner only asserts as teaching coated diamond particles, does not provide that which Dennis, Fuller, and Sung lack, with respect to independent claim 1.

In view of the above, Dennis, Fuller, Sung, and Garner, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 1. Thus, claim 1 is patentable over Dennis, Fuller, Sung, and Garner. Claim 15, which depends from claim 18, is allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 20-21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dennis in view of U.S. Patent No. 6,193,000 (“Caraway”). This rejection is respectfully traversed.

As discussed above with respect to claim 18, from which claims 20-21 depend, Dennis neither shows or suggests a diamond impregnated insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of a drill bit, as recited in claim 18. Caraway, which the Examiner only asserts as teaching a bit body made of diamond impregnated tungsten carbide matrix, does not provide that which Dennis lacks, with respect to independent claims 18.

In view of the above, Dennis and Caraway, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 18. Thus, claim 18 is patentable over Dennis and Caraway. Claims 20-21, which depend from claim 18, are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 46-47 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dennis in view of Garner. This rejection is respectfully traversed.

As discussed above with respect to claim 41, from which claims 46-47 depend, Dennis neither shows or suggests a abrasive insert body and a thermally stable shearing portion disposed thereon, where the thermally stable shearing portion includes thermally stable

polycrystalline diamond, and where at least a portion of the diamond-impregnated insert body and at least a portion of the thermally stable shearing portion form a leading edge of the insert, wherein the leading edge corresponds to the rotational direction of a drill bit, where the leading edge corresponds to the rotational direction of the drill bit as recited in claim 41. Garner, which the Examiner only asserts as teaching a drill bit with larger and lower concentration of diamond is better when drilling a softer formation and smaller, larger diamond when drilling a harder formation, does not provide that which Dennis lacks, with respect to independent claims 41.

In view of the above, Dennis and Garner, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 41. Thus, claim 41 is patentable over Fuller and Dennis. Claims 46-47, which depend from claim 41, are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05516/147002).

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Respectfully submitted,

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**Attachments**